

(7) A positive shutoff valve is installed at the hull penetration; and

(8) The capacity of the electrical system, including wiring, and size and number of batteries, is designed to allow all bilge pumps to be operated simultaneously.

(f) A flexible tube or hose may be used instead of fixed pipe for the discharge line of a submersible electric bilge pump provided the hose or tube does not penetrate any required watertight bulkheads and is:

(1) Of good quality and of substantial construction, suitable for the intended use; and

(2) Highly resistant to salt water, petroleum oil, heat, and vibration.

(g) If a fixed hand pump is used to comply with Table 182.520(a), it must be permanently connected to the bilge system.

(h) On a vessel of not more than 19.8 meters (65 feet) in length, a power driven fire pump required by §181.300 of this chapter may serve as a fixed power bilge pump required by this subpart, provided it has the minimum flow rate required by Table 182.520(a).

(i) On a vessel of more than 19.8 meters (65 feet) in length, a power driven fire pump required by §181.300 of this subchapter may serve as one of the two fixed power bilge pumps required by this subpart, provided:

(1) The bilge and fire pump systems are interconnected;

(2) The dedicated bilge pump is capable of pumping the bilges at the same time the fire/bilge pump charges the firemain; and

(3) Stop valves and check valves are installed in the piping to isolate the systems during simultaneous operation and prevent possible flooding through the bilge system.

(j) A catamaran vessel must be equipped with bilge pumps for each hull, as if each hull is a separate vessel, in accordance with Table 182.520(a), except where:

(1) One dedicated pump is located in each hull;

(2) Each dedicated pump is driven by an independent source of power; and

(3) The bilge system is permanently cross connected between hulls.

[CGD 85-080, 61 FR 986, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; CGD 85-080, 62 FR 51358, Sept. 30, 1997]

#### § 182.530 Bilge high level alarms.

(a) On a vessel of at least 7.9 meters (26 feet) in length, a visual and audible alarm must be provided at the operating station to indicate a high water level in each of the following normally unmanned spaces:

(1) A space with a through-hull fitting below the deepest load waterline, such as a lazarette;

(2) A machinery space bilge, bilge well, shaft alley bilge, or other spaces subject to flooding from sea water piping within the space; and

(3) A space with a non-watertight closure, such as a space with a non-watertight hatch on the main deck.

(b) Vessels constructed of wood must, in addition to paragraph (a), provide bilge level alarms in all watertight compartments except small buoyancy chambers.

(c) A visual indicator must be provided at the operating station to indicate when any automatic bilge pump is operating.

#### § 182.540 Ballast systems.

(a) Ballast piping must not be installed in any compartment integral with the hull of a wooden vessel. Where the carriage of liquid ballast in such a vessel is necessary, suitable ballast tanks, structurally independent of the hull, must be provided.

(b) Solid and water ballast must comply with the requirements of part 178 of this subchapter.

### Subpart F—Steering Systems

#### § 182.600 General.

A self-propelled vessel must comply with the provisions of this subpart.

#### § 182.610 Main steering gear.

(a) A vessel must be provided with a main steering gear that is:

(1) Of adequate strength and capable of steering the vessel at all service speeds;

(2) Designed to operate at maximum astern speed without being damaged or jammed; and

(3) Capable of moving the rudder from 35 degrees on one side to 30 degrees on the other side in not more than 28 seconds with the vessel moving ahead at maximum service speed.

(b) Control of the main steering gear, including control of any necessary associated devices (motor, pump, valve, etc.), must be provided from the operating station.

(c) The main steering gear must be designed so that transfer from the main steering gear or control to the auxiliary means of steering required by § 182.620 can be achieved rapidly. Any tools or equipment necessary to make the transfer must be readily available.

(d) The operating station must be arranged to permit the person steering to have the best possible all around vision.

(e) Strong and effective rudder stops must be provided to prevent jamming and damage to the rudder and its fittings. These stops may be structural or internal to the main steering gear.

(f) In addition to meeting the requirements of paragraphs (a) through (e) of this section, a vessel with a power driven main steering gear must be provided with the following:

(1) A disconnect switch located in the steering compartment, and instantaneous short circuit protection for electrical power and control circuits sized and located in accordance with § 58.25–55(d) of this chapter. Overload protection is prohibited;

(2) An independent rudder angle indicator at the operating station;

(3) An arrangement that automatically resumes operation, without reset, when power is restored after a power failure;

(4) A manual means to center and steady the rudder(s) in an emergency; and

(5) A limit switch to stop the steering gear before it reaches the rudder stops required by paragraph (e) of this section.

(g) In addition to meeting the requirements of paragraphs (a) through (f) of this section, a vessel more than

19.8 meters (65 Feet) in length with a power driven main steering gear must be provided with the following:

(1) A visual means, located at the operating station, to indicate operation of the power units; and

(2) Instructions for transfer procedures from the main steering gear or control to the auxiliary means of steering required by § 182.620, posted at the location where the transfer is carried out.

[CGD 85–080, 61 FR 986, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

**§ 182.620 Auxiliary means of steering.**

(a) Except as provided in paragraph (c) of this section, a vessel must be provided with an auxiliary means of steering that is:

(1) Of adequate strength;

(2) Capable of moving the rudder from 15 degrees on one side to 15 degrees on the other side in not more than 60 seconds with the vessel at one-half its maximum service speed ahead, or 7 knots, whichever is greater; and

(3) Controlled from a location that permits safe maneuvering of the vessel and does not expose the person operating the auxiliary means of steering to personnel hazards during normal or heavy weather operation.

(b) A suitable hand tiller may be acceptable as the auxiliary means of steering where satisfactory to the cognizant OCMI.

(c) An auxiliary means of steering need not be provided if:

(1) The main steering gear and its controls are provided in duplicate;

(2) Multiple screw propulsion, with independent pilothouse control for each screw, is provided, and the vessel is capable of being steered using pilot-house control;

(3) No regular rudder is fitted and steering action is obtained by a change of setting of the propelling unit; or

(4) Where a rudder and hand tiller are the main steering gear.

[CGD 85–080, 61 FR 986, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51050, Sept. 30, 1997]